



TEST PLAN WORKSHEET

PROGRAM DEPUTY APPROVAL

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Presentation Required? ☐ yes ☐ no

COMPLETION INFORMATION

Completion Date: _____

Crew Chief Signoff: _____

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Test Plan Title: RF Setup for 4.4GeV

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Brief Purpose of Test

Define a procedure for setting up the RF for physics running at 4.42 GeV with significant beamloading.

Anticipated Benefits

Efficient use of time, and if the results are positive, progress toward a systematic setup procedure.

Beam Conditions Required

No beam in linacs

Staff Required to Execute the Test (including contact info)

operators, AESRF, and C. Reece X7645

Hardware and/or Software Changes Required

download file only: GSET.DRVHs

Procedure

1. Start with nominal **400 MV/linac** setup with 4.0 GeV beam on BSY dump.
2. Secure beam.
3. Execute “~brown/bin/kaseeit KMASI” to view mod anode settings
 - a. Verify that all KMASI < 0.6 kV.
 - b. else, run “~reece/mchnsetup/kmas/ma_un_economizer”.
4. Download Special file “DRVHfor44GeV.snap”

NOTE:

- a. This file projects to support 900μA Itot with 440 MV+20%.
- b. It is derived from the latest microphonic and arcing data.
- c. It restores DRVH values to cavities derated for control problems during the high

power run. *** These will merit particular attention. *** See Steve Cooper's hit list.

5. LEM both North and South to 450 MV.

- a. run Ptune
- b. In this state, optimize all of the rf modules - adjust RATN values in steps of 0.2 until all GASKLs are $1.8 < \text{GASKL} < 2.2$.
[scripts available: ~reece/mchnsetup/ratn/RATN_trimup and ~reece/mchnsetup/ratn/RATN_trimdown]
- c. run ~reece/logging/allcheck
- d. fix any problems

6. Save present rf setup [GSET.DRVH, GSET, GASKL, RATNI, KMASI, TDOFF...]

- a. execute "kcmore -c GSET.DRVH -c GSET -c GASKL -c RATNI -c KMASI -c TDOFF -c CRFP >! TrimmedAt450 ; lp -dmcc104b TrimmedAt450; cp TrimmedAt450 ~reece/mchnsetup/TrimmedAt450"

7. Run kemcheck and make elog entry.

8. LEM both North and South to 500 MV.

- a. run ~reece/logging/allcheck
- b. fix any problems (anomolous GASKs, arcers, etc.).

9. Identify weak power/control systems:

- a. Run "~reece/mchnsetup/kmas/ma_economizer" to throttle power available from the klystrons, noting any cavities which SOS or show GLDER errors. ** these are shy of adequate control range **.
- b. Execute "~brown/bin/kaseeit KMASI" to view mod anode settings.
- c. Note the cavities with the lowest KMASI values, ** these are the candidates for being power starved when we eventually run with up to 840 μ A Itot.

10. Execute "~reece/mchnsetup/kmas/ma_un_economizer" to lower all mod anode settings for cavities which are presently in the RF ON state.

11. Execute "~brown/bin/kaseeit KMASI" to view mod anode settings All KMASI for ON cavities should be less than 0.6, else run "ma_un_economizer" again.

12. Run kemcheck and make elog entry.

13. Save present rf setup [GSET.DRVH, GSET, GASKL, RATNI, KMASI, TDOFF...]

- a. execute "kcmore -c GSET.DRVH -c GSET -c GASKL -c RATNI -c KMASI -c TDOFF -c CRFP >! OKAt500 ; lp -dmcc104b OKAt500; cp OKAt500 ~reece/mchnsetup/OKAt500"

14. LEM each linac to 437.3 MeV and the Injector to 49.2 MeV

- a. run ~reece/logging/allcheck

15. Perform a full upload of the linac rf systems. (Mike Memory).